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THE FORGOTTEN BUILDING BLOCK:
ENGINEER OPERATIONS IN THE JOINT FORCE

By

Robert S. Clarke
Commander, Civil Engineer Corps, USN

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Prof. John Ballard
Faculty Advisor

Abstract of

The Forgotten Building Block: Engineer Operations in the Joint Force

Modern operational warfare is continually developing into a higher-tech, longer-range, and safer profession, idealized by power projection directly from the U.S., and few “boots on the ground”. When we do put troops on the ground, forces are lightening and operational concepts are being developed and exercised to skip nodes in the operational lines of communication and operation. Thus, if we are in position to eliminate the forward base of operations in a joint task force employment, will engineer assets contribute to the Joint Force Commander's (JFC's) mission and objectives?

In examining recent military operations, engineers have proven to be vital assets to the JFC when properly integrated and synchronized. To properly synchronize the engineer assets in the operational force, JFCs should ensure that the early operational planning process include engineer assets, that the engineer be involved in the intelligence collection and analysis, that engineering force choice is made critically, and that the JFC must be able to integrate inevitable contractor assets in to the operation for optimal results.

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Obviously, all professional soldiers know the importance of infrastructure. What they may not fully appreciate, however, is that the availability of infrastructure cannot be taken for granted, especially in an age when short-notice expeditionary interventions anywhere on the globe may be contemplated by policymakers.¹

Introduction

Modern operational warfare is continually developing into a higher-tech, longer-range, and safer profession-- at least in the eyes of the public and even some in the military. This idealized image is exemplified by standoff weapon systems from bases in or near the U.S., working with almost penetrating intelligence from remote sensors, network centric connectivity, all of course carefully monitored via satellites video links. The U.S. has the capability and capacity to project power from safe havens afar, and because of the perceived risks, tends toward this solution in lieu setting "boots on the ground". When we are forced to set send in ground troops, we consistently seek to do it in a more mobile, versatile, and safer manner. New concepts are continually being developed to shorten lines of communication and operation and to compact and lighten the

force, thereby minimizing (or optimally, in the minds of some, eliminating) forward bases of operations (BOOs). The Army's Interim Brigade Combat Teams and Marine Corps "Ship to Objective Maneuver" doctrine are excellent examples of operational force structures and employment concepts that lighten the air/sea lift load, serve to make the BOO smaller, or bypass them altogether.

While these efforts reduce the tail to tooth ratio of our forces, they also indicate significantly less need for infrastructure in the operating area than in past operations. We have taken action as a nation to drastically reduce our overseas permanent footprint, and we also tread lightly when we set up temporary basing in most nations, afraid of the perception of colonialism as well as fearing being sucked in as a protectorate of needy nations. So one must ask, "are engineering operations truly relevant to the operational commander"? If we are in position to eliminate the forward base of operation, can engineer assets contribute to the Joint Force Commander's (JFC's) mission and objective, tying the tactical to the strategic situation? Some would say that there is little or nothing for the engineer element of a joint force to do in this new modern age of military operations.

¹ Martin Blumenson, "The Emergence of infrastructure as a Decisive

The truth is that in all of our military operations, combat and non combat, there remains a substantial and critical requirement to establish forward bases of operation. Engineer assets in fact still are relevant and critical to the employment of military forces, and will always remain important. Still, it is important to explore recent successes and failures in engineering integration with military operations, and assess them for future development. This paper will explore recent operational employment and integration of engineer assets to optimize mission accomplishment for the JFC. The thesis of this paper is that to properly integrate engineer assets in to the operational force, JFCs should ensure that the early operational planning process include engineer assets, that the engineer be involved in the intelligence collection and analysis, that engineering force choice is made critically, and that contractor assets are integrated into the operation for optimal results.

Background

Jeffery Hughes recently wrote on a concept of what the near future holds for sustainment as the Army transforms,

*"This reduction in bulk will allow resupply by satellite-guided airfoils or pods such as the Advanced Precision Delivery System, the Guided Parafoil Delivery System, and the Semi-dirigible Wing. These inexpensive, unmanned platforms will be able to deliver supplies and equipment with unprecedented precision. Small ultralight global positioning system-guided robotic trucks will make scheduled deliveries and pick-ups on the battlefield. Traditional supply lines will vanish. Condensed rations such as pellets and condensed energy bars ...even more mobile are skin patches that release nutrients into soldiers' bodies at appropriate time intervals. Water will not have to be carried by the gallons over supply lines but will be a byproduct of fuel combustion engines used on the battlefields."*²

While this seems too futuristic to be relevant today, it is therefore surprising that U.S. Joint Forces Command in Millennium Challenge 2002 (a major joint integrating experiment that is designed to assess the "how" of the Rapid Decisive Operation), set as one of the primary warfighter concerns to be physically exercised, "establish access and then sustain a distributed non-contiguous operation without

² Hughes, Jeffery A., "Military logistics continues to repeat itself", Army

relying on fixed bases adjacent to the objective area
[emphasis mine].³" Hence, as military and joint forces transform the "tooth", they often do not seek to transform the "tail". Rather than foster parallel development of the logistics and engineering elements of the joint force, transformation and experimentation seeks to ignore it until either the operation or the exercise is in crisis. This is a mistake.

Military operations have traditionally required lines of communication that include critical roads, bridges, ports, and airfields, all necessary to reach bases of operations from which to prosecute the operation and "reach" the decisive points and attack the center of gravity of the adversaries. In a substantial percentage of military operations, the engineering "product" may be most critical objective, and the engineering assets may be the "operations" element of the JFC. This is especially true in natural disaster response, humanitarian relief, and civic action missions, all of which contribute to the security of the U.S.

Yet, engineer assets are called into the force late, left out of mission analysis, provided skimpy information about the environment that they are to be building in, and

Logistician, (Jan/Feb 2001): 17.

requested to perform surprise sequel action support. This is true even though the mobility challenge is tremendous in projecting engineer forces around the world. Engineers are an under-appreciated but vital asset for the JFC, seeking to tie tactical issues to a strategic situation. Still, in contingency after contingency, engineers respond to the mission and provide critical support to the joint force. There have been substantial engineer roles in such recent operations or active theaters as Somalia, Desert Storm, Haiti, Bosnia, and Kosovo. Most recently, engineers have been vitally employed in Operation Enduring Freedom at both Bagram Air Base and Camp Rhino, Afghanistan, and are currently supporting related foreign internal defense operations in the Philippines.

Engineer operations are typically thought of as logistical elements that support the joint operation. However, often times the products of the engineer force are the CINC's objective—infrastructure is a powerful thing, especially in "shaping" the international environment or in military operations other than war (MOOTW). This may be the case where the mission is Civic Action, humanitarian assistance, or foreign internal defense/counterinsurgency assist. In some of these operations the product may be a

³ U.S. Joint Forces Command, Millennium Challenge Fact Sheet (7/6/01): 1.

water treatment system, school, hospital, road, or refugee camp. This is especially likely in the post-cold War era of continued coalition building and theater shaping by "engagement".

Engineer Integration in Operation Planning

Typically in the joint operational environment, the warfighters dominate the operation planning process. Traditional "operators" analyze factors of space, time and force, assess potential adversaries, evaluate courses of action, and develop OPLANS to accomplish CINC's objectives and achieve the desired end state. They focus on the opposing combat forces and the "trigger-puller" assets to determine courses of action (COAs) to reach a desired end-state. Then, satisfied that the plan is effective and economical, they bring in the logistician (J4) and ask for it to be supported and sustained, including the engineering piece of the operation. And, often the J4 is a supply specialist, and thereby not focused on infrastructure.

Engineer operations, as a subset of operational logistics, is often one of the last aspects of the operation to be considered and planned. Yet, there should be a common thread between the CINC's plan, the JTF plan, and the Civil Engineering Support Plan (CESP) to ensure synchronization of

the engineer efforts⁴. Depending on how set (or "sold" to higher authorities) the course is, the operation plan may not change, even if the logisticians or engineer assets can't support it, and this leads to crisis planning. While it is true in real contingencies, it is also true in deliberate exercises. LCDR Manny Bautista, Naval Warfare Development Command, shared that Millennium Challenge 2002, (that has been in planning for almost two years) experienced a crisis looking for logistical and engineering planning expertise and participants three months before the exercise was to be conducted. The exercise is supposed to assess the cutting edge of integrated military operations, and yet it contains no logistical experiments.⁵ Again, Millenium Challenge exemplifies the assumption by operators that the future as it is envisioned with no forward base and minimal reliance on logistics. Bringing in logistics and engineering late can do little or nothing to allow all elements of the force to optimize the plan's achievement of mission objectives. Bringing the engineer in early can not only support the warfighter, but they can help shape the battlefield environment by carefully choosing what to do and how to do it.

⁴ Lt Col Anthony Vesay, "Joint Engineer Training: Top Ten Lessons Learned", Engineer (April 1999): 15.

"The challenges of planning successful engineer operations in support of joint operations within diverse theaters is vast and varied. The engineer staff must be involved in planning for the initial stage of the process."⁶

Depending upon the maturity of the existing plans, either the CINC staff or the JTF engineer should be looking at objectives and constraints and ensuring that these are clearly and quickly communicated to his assets performing the mission engineering analysis. The engineer must concentrate on the available geographical and force projection infrastructure. The engineer must determine broad mobilization, deployment, employment, and sustainment of military operations.

In Operation Enduring Freedom, Task Force 58 utilized the force engineer early in the planning process and this was cited as a key enabler to a successful mission. The engineer and the operators balanced early the need for lifted firepower vs. sustainment, and this decision may have given the Marines the legs for the operation success.⁷ Even in a quick response contingency, engineers will likely need to be in the Joint Operations Area (JOA) early to improve

⁵ LCDR E.T. Bautista, Naval Warfare Development Command, interview with author, 28 April 2002.

⁶ U.S. Joint Chiefs of Staff, Engineer Doctrine for Joint Operations, Joint Pub 3-34 (Washington DC: 5 July 2000): III-1.

runways or ports, set up cargo handling, or prepare a bed-down. It is important for the engineer assets to be up front in the transportation plan development and lift requirements.

The engineer can also get a jump on possible avenues of support for contingencies, and for planning support early. This is especially true for sequels, where the nature of the construction support may go from temporary to more permanent. For instance the construction work at Bagram has gone from temporary expeditionary to permanent as the task force is now building for the use by the future armed forces of Afghanistan to protect their own country.⁸ Also, several bases seem to be gearing up for future actions in the Southwest Asia, where future actions may rely on forward basing that may be denied elsewhere in the theater.⁹

Operational command and control structures can effectively streamline dissemination of essential direction and information. If the operation is engineering oriented (such as if the infrastructure tied directly to the strategic nature of the operation), the engineering element can be organized under the J3 (Operations) staff, or as a special element under the JFC. If the operation is more combat-oriented and the engineering products are logistical in nature, the engineer can report

⁷ Commanding General, Task Force 58, Command Chronology for the period 27 October to 26 February 2002 (undated).

⁸ Andrea Stone, "Air Base Being Rebuilt To Last For Years", USA Today, 30 April 2002, 7.

⁹ Vernon Loeb, "Footprints in Steppes of Central Asia", Washington Post, 09 February 2002, 1.

to the J4 as one of the logistics elements. During Operation Enduring Freedom, JTF 58 saw infrastructure as a critical element early on, and set up the command and control of the engineers, a SEABEE battalion detachment, as a task group directly under the JFC. “General Mattis stated that the operation would be more like a marathon than a sprint,”¹⁰ and it was, as sustainment was a critical enabler to mission success. Other factors, such as the geographic nature of the operation can also drive the organization of the engineering elements within the JTF. This was the driver in 1998 during the Hurricane Mitch recovery operations under Southern Command, where two separate task forces were formed, and JTF-B (already established for military liaison in Honduras) organized joint teams directly under the headquarters element. This was much different than the newly-formed sister JTF Aguila, which operated separate and distinct service elements in Nicaragua and Guatemala.¹¹

While many factors in the operations planning process are important, nothing is more important than the commander's intent. “Defining the end-state and being able to articulate its means to get there will help synchronize the engineer effort with that of the force”.¹² The lead engineer on the joint force should continually feed options on possible branches and sequels to his engineer assets for analysis. This will ensure that the JTF engineer has information to flesh out the “what if” scenarios of future plans and neither the planner nor the engineer are caught

¹⁰ Commanding General, Task Force 58, Command Chronology for the period 27 October to 26 February 2002 (undated).

unprepared to execute or support. "A common pitfall is that engineers are often excluded from future J5 (planning) and/or current J3 (operations) efforts. One solution is to have engineers on both staff elements".¹³ This may be a luxury the JFC cannot afford, but it is an effective goal if there are the appropriate resources. With normally a maximum of two engineers on a JTF staff, proper placement of assets, rather than additional staff, can effectively optimize the planning effort.

While work and workforces managed in Bosnia SFOR operations were impressive, they were not meshed with the objective. "Due to incomplete initial planning, the early efforts of the military engineers and contractors were not synchronized, resulting in much of the initial base camp construction being relocated, and many facilities were not being constructed for over a two years after initial deployment."¹⁴ However, in the most recent joint military operations in one theater, there is evidence of desired engineer involvement with the warfighter on the front end is happening and paying off. A Navy Construction Brigade Commander who has been involved in recent operations in East

¹¹ Joint Pub 3-34, page II-3-5

¹² Vesay, 13.

¹³ Vesay, 16.

¹⁴ LtCol Roger A Gerber, "Joint Engineer Support to the Warfighting CINCS," (Unpublished Research Paper, Army War College, Carlisle, PA, 2000): 14

Timor and the Philippines noted, "There is more recognition that there is a need for planning for deliberate construction, so engineers are being brought in early on. We all seem to be getting better at that."¹⁵ He noted that there was evidence that planning efforts were tied to the success in the SEABEE support at Forward Operating Base Rhino, Afghanistan. However, he noted while referring to delays in lift in for essential airfield maintenance equipment like graders and dozers, even early and integrated planning cannot solve some intra-theater lift problems. This is echoed in the Task Force 58 After Action Report and in interviews with Major Kevin Johnson, the engineer on the ground at Bagram Air Base. Concurrent operations by multiple task forces in Afghanistan delayed necessary runway repair at Rhino and Bagram, which of course led to increased risk in operating these airfields.¹⁶

The JTF engineer also must ensure flexibility in the CESP to take advantage of opportunities, react to setbacks, or accelerate follow. As combat transitions into peacekeeping, humanitarian assistance, or civic action, engineers must be on the cutting edge of this operation. This is due to the fact that engineer products stabilize a conflicted area fast. In addition to the product, the engineering "process", especially when leveraged by contractors and local labor forces, also serves to stabilize crisis areas with commerce, capital, material, and exercising of often-neglected skills and systems.

¹⁵ CAPT W.G. Shear, telephone conversation with author, 28 April 2002.

Intelligence

"In today's post cold-war environment, an operation may range from war to one of the many environments covered by operations other than war. Whatever the type or scale of the operation, it is almost certain to include some engineer requirements, and thus, a need for engineer intelligence".¹⁷

Intelligence needed to support engineer operations includes lines of communications overlays of infrastructure, characteristics of main and alternate supply routes, hydrologic information, and obstacles. Information on LOC nodes such as ports and airfields is also critical, as well other information on the situation that is not entirely physical. These things include the availability of construction materials, water supply, quarry material, commercial atmosphere, and host-nation engineer assets.

The joint force commander and the J2 (intelligence) will possibly include the engineer in the intelligence planning up front, incorporating engineer needs in the collection plan, but also may use engineer assets to do some of the collection and the analysis. "Who knows the terrain

¹⁶ Lance M. Bacon, "Little Room for Error at Bagram Air Base", Air Force Times, 8 April 2002, 19.

¹⁷ Capt Cynthia A. Glenister, and Maj John E. Richerson, "The Engineer Intelligence Process", Engineer, March 1997, p 27

better than those who move it shape it, and modify it?"¹⁸

The joint force engineer will also be a very skillful asset in analysis of the adversary's situation as well, using the practical knowledge to evaluate the threat and determining enemy courses of action with regard to engineering functions. The adversaries forces and equipment, as well as his access to materials, water, and other resources will be useful to integrate with the overall situation estimate, as well as any vulnerabilities in base camps, airfields, lines of communication, or other protection infrastructure.

Integrating the engineer units into the intelligence picture early will not only add a dimension of analysis to the intelligence picture, but it will also serve to duplicate efforts and get advance planning on the engineer actions off better. General collection efforts by aerial surveillance can be useful to both operators and logisticians, such as engineers, if the collection plan and execution were synchronized.

This is being done with some success today in the U.S. military operations to assist the government of the Philippines with its counterinsurgency efforts. "We are involved in the Intel picture earlier, which is being facilitated by the classified Web-- it has broadened the

¹⁸ Ibid, 28.

access to critical information". Both trigger-pullers and logisticians, including the SEABEE force, were concurrently included in the collection plans surveillance efforts, including sharing analysis in aerial reconnaissance. The use of aerial surveillance assets to survey roads, bridges, and possible base camps optimized both the engineering forces and the maneuver forces and alleviated the need to bring a land engineering reconnaissance force in early.¹⁹ Shared reconnaissance of the area of operation gives the engineer assets the most advance notice on what infrastructure will need to be built or repaired to support the force in the most expedient manner.

Where there are no joint collection efforts that can otherwise satisfy the needs of the engineer, developing efficient and effective engineering reconnaissance teams is critical. Efforts on this are now being assessed and evaluated for effectiveness, and include utilizing small teams with "reach-back" capabilities to minimize lift, footprint, visibility, and impact. Reach-back can also serve to get the JFC the most expert advice (often an engineer far behind the lines, or even in Conus) on engineering support options. The U.S. force in the Philippines recently used some of these techniques with the

¹⁹ CDR John Rice, Chief of Staff, 3rd Naval Construction Brigade, telephone

Seabee Engineering Reconnaissance Team (SERT) successfully on the tasks currently underway on Basilan Island, Philippines.

Early integration of the engineer in to the intelligence process also has another synergistic effect- it reduces lift of troops, equipment and material brought into the theater. With little or no intelligence on factors affecting mission parameters, forwarding more rather than less typically mitigates risk. If preliminary assessments can cut out some of this hedge, this can serve to lighten the force lifted into the theater. Shared collection and analysis can best determine early the local availability of suitable materials, either on the market, or (in a rarer scenario) by scavenging or repairing locally available "junk" engineering equipment. Task Force 58 AAR notes that a SEABEE construction mechanic surveyed the Kandahar airport dump to find old Russian runway sweepers that were serviceable. One was repaired and used for several weeks of critical and safe airfield operation until a modern sweeper was flown in. This AAR also chronicles the use of scavenged construction material to expediently build the 500 man short term holding facility at Kandahar.²⁰ CAPT W.G. Shear noted

conversation on 26 April, 2002.

²⁰ CG TF 58 Command Chronology for the period 27 October to 26 February 2002.

that there was relevant intelligence to allow the SEABEES to know that there was serviceable equipment at the Camp Rhino area that was incorporated into the planning for the deployment.²¹ At Kandahar, the cannibalization was done out of desperate necessity."

Military intelligence units often remember to include the engineering elements in their plans and analysis, but often times this is the last priority in the J2's products.

"Logistical units are usually the last to get intelligence assets, personnel, and support. This fact, coupled with the lack of a clearly defined threat further complicates intelligence collection and production in non-maneuver units."²² During UNOSOM II, U.S. military intelligence noted the criticality of the support element's intelligence needs, "In Somalia, the logistician fought the rear battle within the main battle area. This required a detailed plan, analysis, and flexibility from the intelligence personnel and logisticians who defended bases in or near an enemy stronghold".²³ In this case, the U.S. logistical support group and its intelligence assets overcame the innate challenges of the Somali situation, notably minimal combined

²¹ Shear.

²² Capt David L. Brand, Sergeant Paul J. Bryson and Specialist Alfredo Lopez, Jr., "Intelligence Support to the Logistician in Somalia", Military Intelligence (October-December 1994): 8.

²³ Ibid, 5-6.

interoperability and a constantly changing threat, and managed collection, processing and dissemination of critical information to ensure logistical success. "Our most important product was the MSR (Main Supply Route) Threat Packet...including engineer assessments, map reconnaissance, and on-the-ground terrain analysis...we packaged our reports based on our customer- the logistician."²⁴ The operation also recognized the inherent need of synergistic support between different elements of the joint force, "With continued deployments in operations other than war, the need for quality intelligence in all units, regardless of mission, is imperative. All units must not only consume intelligence, but must also collect and produce intelligence in the ongoing efforts to fill gaps in the intelligence picture."²⁵

Choosing the Engineering Force

One essential planning decision is the choice of the engineer force—which asset, or combination of assets to use to accomplish the objective. Each joint force component commander has a robust blend of forces at his disposal. Each will have a military engineering force, each with varying degrees of mobility and with its own specialties.

²⁴ Ibid, 8.

Each component command in the last ten years has developed much more responsive external theater contractors under large global Civilian Augmentation Programs (CAPs, such as Army's LOGCAP, Navy's CONCAP, AF's AFCAP). While these contractors are versatile, they can be costly, and depending upon the situation, they can possibly require a large footprint, and may rely on the armed services for lift support. If the JFC wants to consider contracting, there are several considerations when comparing external theater contractors (who now have matured as a global asset), or theater support contractors (dependent upon the availability of local service and material providers and for which local contracting officers will be needed). It is most probable that there will be a mixture of these forces chosen for different facets and phases of the operation.

Military engineering units are the forces of choice for any initial entry support, or base development in an area of conflict, largely based on the principle of protection. This has again most recently been the experience in the Balkans and in most of our operations in Afghanistan. However, at Bagram, although a risky protection environment, it was determined that local laborers and suppliers were adequately tuned to the environment, having lived through 25

²⁵ Ibid.

years of armed civil war.²⁶ There will most likely be less military forces available than there will be desire or requirement for them. Force caps are a becoming increasingly prevalent, even in the most critical combat operations tied to core interests. Operation Enduring Freedom, an operation in support of the most core national U.S. interest of survival, endured a force cap restriction on TF-58 operations.²⁷

Again, in concert with planning for branches and sequels, the shift from initial entry and bed-down to deliberate base construction and maintenance is often a good time to transition to contractor support, freeing up the military engineering force for operations requiring more protection and flexibility. If conditions warrant, and the area is well secured, contractors can be integrated into the base development phase also. For example, an effective use of a true hybrid force is chronicled,

"At the height of the effort [base camp construction in Kosovo] about 1000 expatriates hired by Brown and Root, along with more than 7,000 Albanian local nationals, joined the 1,700 military engineers. From early July and into October, more than

²⁶ Maj Kevin Johnson, Task Force Bagram Engineer, telephone conversation with author, 26 April 2002.

²⁷ Commanding General, Task Force 58.

700,000 cubic feet of living space had been built—equal to a subdivision of 355 houses—all in less than 90 days!”²⁸

While this force mix effectively accomplished the objective and employment of local laborers was notably beneficial to the area, the presence of a large foreign contractor like Brown & Root was also conspicuous. In some cases this may cause negative unintended consequences. Where the JFC wants to minimize the intrusiveness in a JOA, restraint in the forces chosen to provide engineering support can have a significant impact.²⁹ The use of local theater contractors can also add to the legitimacy of an operation, minimizing the footprint of the military force, minimizing the lift and associated logistical footprint requirement, and adding to the economy of the area. This can stabilize many mal-affected areas, depending upon the course of the main operation and the environmental characteristics.

Planning considerations should be prevalent through the course of the operation. "Even at the camp level, the end-state has a lot to do with it", noted LCDR Manny Bautista, who was involved in the establishment and maintenance of

²⁸ Robert L. McClure, "The Engineer Regiment in Kosovo," Engineer (April 2000): 8.

base camp areas in Bosnia when asked about how he made decisions as part of SFOR. He noted that all decisions tied to the objective stimulation of Bosnia's economy, which was directly tied to the Dayton Peace Accords.³⁰ As much feasible, infrastructure management was outsourced to locals to get economy back on its feet. Sometimes the engineer can provide the COA (which may be the building of a product essential to the stability of an area) that will satisfy the objective.

Joint efforts of military engineering units in operations can also optimally serve the JFC. Army Combat Heavy, Air Force Red Horse, and Navy SEABEE engineers are becoming more accustomed to training and working together for mutual support. There is a skills matrix that talks to complementary talents of each force, and each force can be tailorable (to varying degrees) to a small packaged unit or mixed into joint units. Phasing can also be integrated in the joint efforts. At Bagram, Red Horse did rapid and preliminary assessment of the airfield. Army Engineers then came in to conduct small unit repairs and local direct contingency contracting.³¹ Again, to demonstrate the power of economics in relation to military power, even in a war as

²⁹ Nathan Hodge, "Bagram Cleanup: A Delicate Balancing Act", Defense Week (March 25, 2002 accessed at <http://ebird.dtic.mil/Mar20020325bagram.htm>):1.

³⁰ Bautista.

desperate as that against terrorism, local economic stabilization around Kabul was a very central JTF objective and this tenet was exercised early in the operation.

Contractor Integration

While essential to optimize mission accomplishment, "properly integrated contracting efforts", does not necessarily mean, "fully integrated contractor personnel". It is important to determine in the planning phase what degree of contractor integration, be it from intra-theater contracting or local host nation contracting, will be feasible and proper for mission execution. When a decision is made to perform a portion of the engineering work by contract those tasks and coordination of that work must not fall off of the planning charts. Efforts still must be maintained to synchronize the contractor and military engineering efforts with each other, and most especially with the overall operation's needs. JFCs and JF engineers must glean key planning elements to synchronize efforts of contractors. The long-range estimate, along with intended courses of action, branches, and especially sequels, will be essential to the engineer staff and the contracting officers

³¹ Johnson.

to set the wheels in motion to transition engineering forces or redeploy them to other areas of operations.

Simplified Acquisition Procedures may be necessary in many crisis actions, and this authority must be requested and justified early in the process to optimally support the situation. This authority is necessary to streamline and reduce the administration procedures that are typically required by law of regulation of a contracting officer, generally slowing the process down and introducing more agents to inspect work and such things that in a contingency may be counterproductive to the overall operation. This authority was not granted in Somalia during Operation Provide Comfort on the grounds that there was no combat environment. The JFC and engineer must properly assess the risk of the contract area becoming difficult or dangerous, or of the need for speed and flexibility to overcome administrative precision, and make the appropriate needs visible to higher authority.

The issue of transportation must not be abandoned when deciding to use contractor support for all or part of an engineer effort. While an external theater contractor may not require military lift to deploy to the JOA, loading and throughput restriction in theater must be examined. In an operating area with limited ports and airfields, these nodes

may serve to halt or delay the operation if not coordinated through the transportation plan. And, if theater local contracting is used, material availability must be determined from area reconnaissance. If material or some tools are to be imported into the JOA, transportation must be available, throughput ensured, to ensure synchronization.

The bottom line is that going contract in full or in part doesn't alleviate the JTF engineer of examination of logistical and transportation integration. The need for exposure of critical transportation is again exemplified by the recent operations in Afghanistan, where theater forces at Bagram were in dire need of critical equipment for which there was no transportation. They made do by borrowing unexpected resources from British allies at Bagram, but this situation was not optimal, and the effect was felt by the operators where work proceeded slowly and there were often engineering crews working directly adjacent or under the flight path.³² This was a risk to both planes and crew.

Conduct of contractor personnel is certainly high on the priority list of concerns of JFCs regarding contracted logistical operations and engineering. While the JFC does not have command and control over contractors, the JF engineer and the contracting officer must set the ground

³² Maj Kevin Johnson <kpjl261@yahoo.com> RE: "SIPRNET Down" (Email to

rules for contractor personnel conduct. Legitimacy that is gained by utilizing contractor assets can be lost if the conduct of the contracted workforce hinders the mission by creating a bad image. Contractors working adjacent to military units can also affect the morale of the military personnel if there are widely differing standards of conduct. While this is a risk, it can be mitigated by good communication between contracting officer and contractor.

Mission failure is a risk with a greater downside, but the maturity of the "CAP" contracts has shown that that is not as much of a problem as in the past. While many commanders sensed inadequate commitment to mission, the mission risk can be mitigated through close cooperation and clear communication of the mission and its end states. "We now have hard data on risk levels associated with the Army's use of civilian contracts in recent military operations. We now know that the LOGCAP contractors can get the job done."³³ This certainly was a concern for JFCs that heavily relied on Brown and Root in Bosnia, as the LOGCAP contract was really proving itself as a prime mover for modern engineering tasks, and the concern was mitigated by sound

Robert Clarke <clarker@nwc.navy.mil>) 28 April 2002.

³³ Susan C. Foster, "Contractors on the Battlefield: Force Multipliers of Detractors?" Unpublished Research Paper, Army War College, Carlisle Barracks, PA (07 April 1998) 13.

contract administration and camp leadership³⁴. The Department of Defense has recognized recently the commitment by civilians in crises by issuing and awarding the "Defense of Freedom" medal to deserving contractor and employee personnel.³⁵ While it is not in the JFC's interest to encourage civilians and non-combatants in dangerous situations, they are not likely to bail without being relieved by appropriate military assets.

Counter-arguments

Some would argue that by planning operations with the logistical and engineering forces involved early will dilute the operations planning process and the warfighter's prime objectives will quickly and continually be overshadowed by the supporting functions-- the "tail wagging the dog". Or, that the logistical and infrastructure issues being introduced early will inhibit the planners from thinking out of the box. This is not the case as recent experience has shown that the involvement of support elements in the process simply serves to keep the process grounded and to get allow the support staff to get a head start on the supporting plans required to implement a chosen course of action. Integration of infrastructure experts also gives

³⁴ Ibid, 14.

³⁵ DoD News Release, "Defense of Freedom Medal Unveiled", Dimensions (Nov/Dec 2001) 14.

the JFC more flexible deterrent options in the case of conflict, and the "operations" experts in the case where the engineering product may alleviate the crisis. The engineer on the force may broaden the planning effort by introducing more options rather than limiting them.

Then, where will the engineers come from to man these staffs? Where will the engineer assets come from to perform intelligence planning, collection, and assessments? The services' engineering commands need to continue to progress in their efforts to make the proper quantity of assets available, and also of ensuring that the quality of the engineer working in the JTF environment is high and well trained. All of the services must continue to develop the skills in engineers not just to do these functions, but to do them efficiently, thereby making the manpower shortage less acute. CINC and JTF engineers must not start on a steeper learning curve than other planning staffers.

Also, in addition to each Service's training necessity, experience working jointly can reduce redundancy. As engineers become more familiar with the forces, capabilities, and characteristics of the other services, the CINC will not need one engineer from every service for every function on every joint staff. Melding other aspects of the engineering operation such as common doctrine and perhaps

common joint "CAP" contracts will also increase joint interoperability. When forming these JTF planning staffs, CINC engineers must interact to place the engineer appropriately in the command structure to serve optimally. On intelligence forces, the recent efforts on engineering reconnaissance must continue to be developed and exercised, utilizing smaller collection teams, with greater reliance on functions in the rear.

Many vehemently oppose contractors on the battlefield—they cite issues of protection, mission dedication, and cost. While these are all elements to be dealt with in the planning of the operation and must not be ignored, selected functions of contracted support are not a choice, but a reality. Force caps on most operations, service downsizing, and the high operations tempo required by our national security strategy dictate that contractors will be there with our uniformed military. Plus, there has been recent success in the performance of work by contract, especially as it stabilizes a crisis area. These force characteristics must be capitalized on in tying the tactical requirements to the strategic objective, and the risks of security, performance, and cost should be managed, not avoided.

Recommendations and Conclusion

The first recommendation is for the JFC to include all logisticians, and especially the engineer, in the up front planning for a military operation regarding combat and non-combat. In concert with this recommendation is that the engineer immerse himself in the planning effort, and speak up early about engineering efforts that can add to the mission, work around a constraint, or support COAs, branches or sequels.

The second is that the joint force engineer must integrate critical information requirements with those of the force, to be a part of the intelligence collection plan formation, and should ensure that the J2 knows what gathering and processing capabilities that the engineer assets bring to the fight.

The third recommendation is that the JFC and engineer tailor the force needed for an operation to the principles of the operation, the factors of space, time and force, as well as the constraints from higher authority. Efforts should be made to think out of the box when forming engineering teams, and think of joint integration and contractor-engineer integration as well. The JFC should make plans to deal with the special requirements of how he wants to handle contractors in the JOA as well. Forming and

leading a joint team can have synergistic effects on the product that is built and the force that is supported.

The fourth and final recommendation is that joint training and experiments include logistical elements. Engineering equipment, concepts, and doctrine should be continued to be refined to work in parallel with the joint force transformation efforts, ought to be tested in the field alongside the warfighters. Joint exercise commanders ought to set some limits on the futuristic assumptions that are made in such exercises as Millenium Challenge. The next major joint exercise ought to bring that down to earth with a more relevant future concern, such as the ability to form smaller, faster, and more versatile bases adjacent to the operating area. If we train how we are going to fight, the JFC and his engineer assets have the best chance for parallel development, which will surely enhance integration and synchronization in military operations.

The JFC must recognize that infrastructure will play a critical part of any joint military operation. He must guide the staff to think of logistics along each step of the operations process, and think not only of "supplies", but also of infrastructure. Engineering, which produces this critical asset for the joint force, is the under-appreciated building block in the joint force. Recent force employment

of engineering assets has added significantly to the operational mission accomplishment of the theater CINC; when properly integrated, synchronized, and applied, engineer capabilities are a key tool in modern military operations. Good planning, intelligence, force choice, and contractor integration are keys to using engineer assets to accomplish mission objectives.

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